

What is claimed is:

1. A process for preparing α -olefins having from 3 to 16 carbon atoms by catalytically cleaving 1-alkoxyalkanes,
5 characterized in that
the cleavage is carried out over alumina and/or zirconia containing from 0.01 to 10% by weight of at least one alkali metal and/or alkaline earth metal oxide.

2. The process as claimed in claim 1,
10 characterized in that
the alkali metal oxide used is potassium oxide and/or sodium oxide.

3. The process as claimed in claim 1 or 2,
characterized in that
15 the alkaline earth metal oxide used is strontium oxide, magnesium oxide and/or barium oxide.

4. The process as claimed in claims 1 to 3,
characterized in that
20 the catalyst additionally contains from 0.01 to 5% by weight of titanium oxide, silicon dioxide and/or thorium oxide.

5. The process as claimed in one of claims 1 to 4,
characterized in that
25 the catalytic cleavage is carried out up to a conversion of from 10 to 95%.

6. The process as claimed in one of claims 1 to 5,
characterized in that
the cleavage is carried out in the gas phase.

30 7. The process as claimed in one of claims 1 to 6,
characterized in that

the cleavage is carried out at a temperature of from 100 to 600°C.

8. The process as claimed in one of claims 1 to 7,
characterized in that

5 1-methoxyoctane, 1-ethoxyoctane, tert-butyl methyl ether, tert-amyl methyl ether, tert-amyl ethyl ether or tert-amyl butyl ether is cleaved to the corresponding α -olefins and alcohols.